MOIT/GIZ ENERGY SUPPORT PROGRAMME
Together for a better energy future

Mitigating Financial Risks for Biomass Energy projects in Viet Nam

Thursday, December 15, 2016
Agenda

1. Renewable Energy in Vietnam with focus on biomass – potential and current utilization
2. Challenges and Barriers
3. Design of a Risk Mitigation Mechanism for Biomass Energy Projects
4. Potential Impact
1. Renewable Energy in Vietnam – potential and current utilization

**Electricity Production and Installed Capacity (2015)**

- **Electricity Production**: 164,31 TWh
- **Installed Capacity**: 39,35 GW

- **Renewable Energy**:
  - Hydro: 37.3%
  - Gas: 22.5%
  - Coal: 33.5%
  - Import: 1.4%

- **Electricity Production**:
  - Hydro: 30.4%
  - Gas: 30.0%
  - Coal: 34.4%
  - Import: 1.5%

* Including small hydro power

Source: IoE (2016)
1. Renewable Energy in Vietnam – potential and current utilization

Renewables Targets for 2020, 2025 and 2030

<table>
<thead>
<tr>
<th>Year</th>
<th>RE* (% electricity production)</th>
<th>Total installed capacity</th>
<th>% electricity production</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>2020 6.5 %</td>
<td>800 MW</td>
<td>1%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>200 MW</td>
<td>0.8%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>850 MW</td>
<td>0.5%</td>
</tr>
<tr>
<td>2025</td>
<td>2025 6.9 %</td>
<td>2,000 MW</td>
<td>1.2%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1,200 MW</td>
<td>1%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>800 MW</td>
<td>1.6%</td>
</tr>
<tr>
<td>2030</td>
<td>2030 10.7 %</td>
<td>6,000 MW</td>
<td>2.1%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4,000 MW</td>
<td>2.1%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12,000 MW</td>
<td>3.3%</td>
</tr>
</tbody>
</table>

* Including small hydro power

Viet Nam’s NDC on Biomass Energy: “By 2030 the capacity for thermal biomass power will reach 2,000 MW to replace coal-fired thermal power.”
1. Renewable Energy in Vietnam – potential and current utilization

<table>
<thead>
<tr>
<th>Source</th>
<th>Potential</th>
<th>Current</th>
<th>Invested</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biomass biogas</td>
<td>8,500</td>
<td>375</td>
<td>8,125</td>
</tr>
<tr>
<td>Wind</td>
<td>27,000</td>
<td>164</td>
<td>26,836</td>
</tr>
<tr>
<td>Solar</td>
<td>130,000</td>
<td>5.6</td>
<td>129,944</td>
</tr>
<tr>
<td>Small Hydropower</td>
<td>7,000</td>
<td>2.4</td>
<td>4,857</td>
</tr>
<tr>
<td>MSW</td>
<td>400</td>
<td>0</td>
<td>397.6</td>
</tr>
<tr>
<td>Geothermal</td>
<td>350</td>
<td>0</td>
<td>350</td>
</tr>
</tbody>
</table>

**Sources:** N.D.Cuong, WB, MoIT, IE, EVN

**Unit:** MW
1. Renewable Energy in Vietnam – potential and current utilization

Biomass theoretical potential

- Woody Residues: 3.5 million tons
- Agriculture Residues: 95.5 million tons
- Wood Energy: 37 million tons

Investment requirements:
- 2020: US$ 345.8m
- 2030: US$ 2,537m
2. Challenges and Barriers

Why Viet Nam needs to turn to RE and EE

- Increasing dependence on imported fossil resources
- Increasing risks of energy supply security
- Global plummeting costs of renewable generation technologies
- Increasing environmental problems

Renewable Energy & Energy Efficiency

Policy

PDP VII revised + RE Strategy
(March 2016)  (November 2015)
2. Barriers and Challenges

Lack of Financing Options
- Limited access to financing (equity & loans) and guarantee schemes

Regulatory Framework
- Lack of national law and planning for RE, low FiTs
- Complex and unclear procedures for investments

Technology and Market Readiness
- There is a lack of locally available technologies for RE market development.
- Lack of available necessary RE potential data for project development

Capacity
- Low capacities for project development and financing
- Low awareness of biomass energy potentials and planning within local authorities
- Limited biomass project experiences
- Limited knowledge of RE technologies by local commercial banks
2. Barriers and Challenges

Lack of Financing Options

- Requirements from local banks for loan to RE projects
- Maturity: 5 – 7 years
- Interest rate: 10 – 12%
- Collateral: XXX

MOIT/GIZ Energy Support Programme
3. Designing a Risk Sharing Facility (RSF) for Biomass Energy projects in Viet Nam

Piloting the sugar industry

- The Risk Sharing Facility initially seeks to focus on the sugar sector.
- The sugar industry is well consolidated and has readily available biomass fuel – without significant supply chain concerns.
- In addition, sugar companies have an interest in developing/expanding RE capacities based on the recent establishment of biomass CHP feed-in-tariff (FIT). Under this CHP FIT, implementing/expanding CHP generation in sugar mills is economical.
- Based on these factors, a concrete project pipeline for the sugar industry will be developed.
- The pipeline will then receive support from a Risk Sharing Facility (RSF) to facilitate access to loan financing to the investors.
3. Designing a Risk Sharing Facility (RSF) for Biomass Energy projects in Viet Nam

How would this Risk Sharing Facility work?

- The Risk Sharing Facility (RSF) is intended to **mitigate the risk of the lending bank in case of a default** by the borrower (investor of a biomass energy project) on his loan.
  - I.e. in the case that a borrower cannot repay a loan which has been guaranteed by the RSF, a **portion of its losses** (principal and/or second losses) will be covered by the Risk Sharing Facility.

- In addition to sharing the risk of loss associated with the covered asset portfolio, the RSF also intends to **provide technical assistance** to
  - **expand the investors’ capacity** to submit bankable project documents
  - **expand banks’ capacity** to assess, monitor/service the loan (application)
3. Designing a Risk Sharing Facility (RSF) for Biomass Energy projects in Viet Nam

**Approach**

The RSF was designed thanks to the inputs of:

- 5 largest commercial banks & VDB & State Bank of Vietnam
- 10 sugar factories
- International & domestic technology providers and energy sector experts
- Donors and IFIs
- Multiple government stakeholders
Experience from other countries shows potential leverage of 5-6 times will be made available to finance bioenergy projects.

RSF and accompanying technical assistance will help reduce risks – and thereby costs for the lending banks.

As RE market matures, banks will be more comfortable lending to bioenergy projects without using RSF in the future.
Thank you

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